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INVENTORY MANAGEMENT

Air Force Inventory Accuracy Problems

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The Honorable Pete Wilson
United States Senate

The Honorable John Glenn
Chairman, Committee
on Governmental Affairs
United States Senate

As requested in Senator Wilson's letter of April 15, 1986, we have reviewed the Department of the Air Force's inventory management. This report is one in a series related to the effectiveness of defense logistics.

As arranged with your Offices, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days from its issue date. At that time, we will send copies to interested committees and other Members of Congress; the Secretary of Defense; the Director, Defense Logistics Agency; and the Director, Office of Management and Budget. We will also make copies available to other parties upon request.

Frank C. Conahan
Assistant Comptroller General

Executive Summary

Purpose

The Department of the Air Force maintains inventories valued in the billions of dollars to meet the needs of its forces throughout the world. To ensure economic and effective supply support, it is essential that Air Force inventory managers maintain sufficient but not excessive inventories. Accurate inventory records and adequate physical security over the inventories are integral elements in providing this assurance.

GAO evaluated the accuracy and completeness of Air Force inventory records and its research into differences between physical inventory counts and records. GAO also assessed the adequacy of the physical security over these inventories at several locations.

Background

The Air Force procures, stores, repairs, and distributes supplies essential to conduct its operations. The Air Force Logistics Command, Wright-Patterson Air Force Base, Ohio, plans and directs logistics support to all Air Force major commands worldwide through five air logistics centers. Each air logistics center is responsible for managing assigned inventory items. As of September 1986, inventories held by the centers were valued in excess of $21 billion.

Results in Brief

The Air Force has implemented a variety of policies and practices to improve inventory management and the accuracy of inventory reports. Although the Air Force has made considerable progress in improving inventory control, record accuracy—how often the inventory record and the on-hand material balances agree—continues to be a problem. The Air Force also continues to experience problems in conducting adequate causative research into the differences between physical inventory counts and its records. Physical security over inventory assets also needs to be improved.

The Air Force considered inventory management controls to be a material weakness in its fiscal year 1986 assessment of internal controls conducted pursuant to the Federal Managers' Financial Integrity Act of 1982. Since the impact of the improvements had not yet been measured and, according to the 1987 report, other improvements are still to be implemented, this area should continue to be considered as a material weakness. Corrective actions should be reported in the fiscal year 1988 Financial Integrity Act report by the Secretary of the Air Force.

Principal Findings

Air Force Efforts Could Improve Inventory Accuracy Measures

The Air Force has adopted a new statistical sampling approach to physical inventories and has developed new measures of inventory accuracy that could result in more accurate inventory management performance reporting. The new measures provide useful additional information with which to evaluate inventory management. However, GAO is concerned that the sampling methodology used to select items for inventorying leads to results that overstate the Air Force's inventory accuracy. To illustrate, 405 of the 1,500 items in the 1986 samples of the three air logistics centers GAO visited had no recorded inventory balances or storage location. Physical inventories of zero-balance items with no storage location record are assumed to be correct since there is no way to accurately verify the legitimacy of the record. Therefore, including these items in the samples overstates the record accuracy rate. According to the Department of Defense (DOD), in revising its inventory control program, it plans to require annual statistical samples as a basis for measuring inventory accuracy.

Air Force Research and Adjustment Policy Differs From DOD's Criteria

The Air Force has adopted a policy for researching and adjusting potential inventory variances for items that differs from DOD's criteria; however, it has not obtained authority from DOD to implement this change. These new criteria allow inventory records and on-hand quantities to remain out-of-balance by as much as 10 percent and $4,999. The Air Force believes the change is unlikely to affect customer support. GAO believes the change was not sufficiently supported and questions the Air Force's decision to adopt such a policy without specific authority from DOD.

Causative Research Not Contributing to Records Accuracy

GAO found that the Air Force continues to experience problems in conducting adequate causative research into the differences between physical inventory counts and its records. Causative research efforts end without conclusive results in substantial numbers of cases. In other cases, the same causes are identified as problems year after year. Although Air Force Logistic Command regulations require trend analysis of causative research results to identify inventory management problems and evaluate the effectiveness of its causative research, trend analysis is not routinely conducted at air logistics centers.

Physical Security Over Inventories Needs to Be Stressed

Physical security of inventory assets is an integral element of inventory management. Security at the centers GAO visited appeared inadequate. Only one of the three centers GAO visited had security fencing in place. All three centers used personnel badges to control access to its primary storage sites; however, privately owned vehicles and contractor vehicles were allowed to park adjacent to warehouse facilities, which increases the vulnerability of government property to theft.

Recommendations

GAO recommends that the Secretary of Defense, in requiring annual statistical samples as the basis for measuring and reporting inventory accuracy in the inventory control effectiveness report, provide that these samples exclude zero-balance items where there is no record of a storage location.

GAO also recommends that the Secretary of the Air Force direct the Commander, Air Force Logistics Command, to

- reevaluate its research and adjustment policies, especially the policy of not adjusting discrepancies under $5,000 that do not involve more than 10 percent of recorded items, to ensure that they do not have adverse effects on inventory management. If the policy is determined to be supportable, ensure that authority has been obtained from DOD to implement a change that is consistent with established DOD policy;
- continue emphasizing the need for effective causative research that determines underlying causes of inventory discrepancies and systemic problems. Variances currently under the monetary criteria for causative research should be sampled as further input to identifying and correcting systemic problems; and
- strengthen physical security at air logistics centers by providing fencing around warehouses where practical, especially primary storage facilities, and not allowing parking of contractor or privately owned vehicles adjacent to warehouses.

Additionally, GAO recommends that the Secretary of the Air Force reassess this area in its next Financial Integrity Act statement and continue executing and reporting progress on the milestones for correction of the material weakness identified in the fiscal year 1986 Financial Integrity Act statement.

Agency Comments and Our Evaluation

DOD generally concurred in the report's recommendations and provided information on actions taken or planned to correct problems and implement GAO's recommendations. Suggested technical corrections and clarifications have been incorporated in the report and considered in framing GAO's final recommendations.

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Abbreviations

ADP	Automated data processing
AFLC	Air Force Logistics Command
ALC	Air logistics center
DOD	Department of Defense
FIA	Financial Integrity Act
GAO	General Accounting Office
GMAR	Gross monetary adjustment rate
ICE	Inventory Control Effectiveness
MILSTRAP	Military Standard Transaction Reporting and Accounting Procedures
OSD	Office of the Secretary of Defense

Introduction

The Air Force procures, stores, repairs, and distributes supplies essential to conduct its operations. The Air Force Logistics Command (AFLC), Wright-Patterson Air Force Base, Ohio, plans and directs logistics support to all Air Force major commands worldwide through five air logistics centers (ALC). Each ALC is responsible for managing assigned inventory items. As of September 1986, Air Force wholesale inventories were valued in excess of $21 billion.[1]

At each ALC, the Directorate of Distribution is responsible for inventory control and accuracy. The Directorate manages the receipt, storage, issue, and shipment of material. The Directorate's Quality Management Division manages the physical inventory program, which includes inventory procedures, research into causes for inventory discrepancies (causative research), and presentation of inventory results to management.

Inventory Control and Accountability

The Air Force physical inventory program is designed to assist management in maintaining accurate records of assets stored at the ALCs. This accuracy is essential to effective inventory management. Because of the continuous daily flow of items into and out of the Air Force supply system through receipt and issue transactions, inventory records must be continuously updated. These entries to the records provide numerous opportunities for error, thereby creating differences between quantities of assets actually available and those reflected on the inventory records. To maintain an acceptable level of accuracy in inventory records, the Air Force has established inventory control policies and procedures for

- taking physical inventories,
- conducting audits to verify stock locations,
- doing quality control studies, and
- researching potential and actual inventory record variances.

ALCs periodically schedule physical inventories on a complete, sample, or selective basis. Controlled items (classified, sensitive, or pilferable) are provided a higher level of inventory protection and are counted completely, either annually or semi-annually. Other items are counted on a sample or selective basis on a 3-year cycle. The Air Force also performs unscheduled inventories of designated items when suspected discrepancies exist. Automated data systems compare the inventory results with

[1]For purposes of this report, wholesale inventories refer to materials stored by ALCs for distribution to retail activities (e.g., Air Force bases).

the quantities on stock records. Under Department of Defense (DOD) policy, when discrepancies between physical inventory counts and stock records are found, adjustments should be made to the inventory records. Adjustments are categorized as gains (quantities counted in the warehouse that exceed record balances) or losses (quantities counted in the warehouse that are less than record balances). Depending on the size or value of a discrepancy, it may be subject to causative research to determine the reason for the discrepancy.

In June 1986 the Air Force modified its policy so that only discrepancies in excess of $4,999, or 10 percent of the recorded quantity, would be adjusted and subject to validation research to determine whether the potential variance was caused by errors in the inventory including unprocessed (inflight) transactions that occurred just before or during the physical count. Variances not resolved through validation research may also be sampled and subjected to causative research.

Causative research is required on noncontrolled item discrepancies valued at $16,000 or more, before making adjustments to stock records. Controlled item discrepancies are subjected to complete causative research; however, discrepancies for pilferable items under $2,500 and other noncontrolled item discrepancies may be researched on a sample basis. Causative research consists of a complete review of all transactions, catalog data changes, shipment discrepancies, and unposted or rejected documentation occurring in the last 12 months, or since the last inventory. This research is intended to assist managers in (1) identifying control system failures and potential actions to reduce similar discrepancies in the future and ensure proper adjustments to supply records and (2) evaluating trends or systemic problems so corrective actions can be taken. Causative research ends when the cause of the discrepancy has been discovered or when, after reviews of the transactions, no conclusive findings are possible.

Under current DOD policy, if research of a physical inventory adjustment can establish that the discrepancy was caused by a previous erroneous transaction, the inventory adjustment is reversed. Under Air Force policy, inventory managers are allowed to reverse erroneous inventory adjustments or avoid taking adjustments if they were caused by a data processing error (i.e., erroneous key punching) occurring within the current 30-day reporting period. Reversals of inventory adjustments during the previous year or since the last inventory, although permitted under DOD policy, are not permitted under Air Force policy. The Air Force

requires that discrepancies in the records be corrected by processing another inventory adjustment.

Inventory adjustments are considered a measure of the accuracy of inventory records and are reported to DOD on the Inventory Control Effectiveness (ICE) report. Gains and losses are reported to the Air Force headquarters and DOD as dollar adjustments to inventory balances. The ratio of total dollar adjustments (gains and losses) to average inventory value is reported as the gross monetary adjustment rate (GMAR). In fiscal year 1986 the GMAR for Air Force wholesale assets was 4.2 percent, based on reported adjustments of about $1 billion.

The record accuracy rate, which in 1986 was reported as 82.5 percent, is determined based on the number of records not requiring adjustment compared to the total number of records inventoried. Although all adjustments are included in the gross monetary adjustment rate, DOD requires that only major adjustments (over $800) be reported and included in computing record accuracy.

Prior Audits

Air Force methods of inventory taking and inventory control have been the subject of congressional hearings and GAO and Air Force Audit Agency reports for many years.

In April 1983 hearings were held on military supply system inventory control problems. At these hearings, and in our subsequent report, we noted that the magnitude of inventory accuracy problems in the Army, Air Force, and Defense Logistics Agency were much greater than previously recognized by DOD.[2] Major physical inventory variances were improperly corrected and thus not reflected in reported statistics. For example, in fiscal years 1981 and 1982, the Air Force resolved 92 percent of its physical inventory dollar variances without making or reporting physical inventory adjustments. Our review and prior Air Force audits indicated that physical inventory variances were often arbitrarily and erroneously reconciled to agree with recorded balances.

[2]Navy's Progress In Improving Physical Inventory Controls and the Magnitude, Causes, and Impact of Inventory Record Inaccuracies in the Army, Air Force, and Defense Logistics Agency (GAO/NSIAD-84-9, Nov. 4, 1983).

As part of a Defense-wide follow-up to the hearings and our report, the Air Force Audit Agency looked at the management of wholesale inventory adjustments.[3] It found that wholesale records were inaccurate and the effectiveness of inventory management was impaired by inaccurate reporting of inventory value, adjustments, and count accuracy rates; inadequate research of inventory variances; and incomplete or insufficient directive guidance.

In February 1986 the Air Force Inspector General reported on Air Force supply system vulnerability and concluded that Air Force physical security practices at both wholesale and retail maintenance and supply activities provided numerous opportunities for theft.[4] The Inspector General also found that weaknesses in inventory procedures and adjustment practices could have resulted in inaccurate records at wholesale and retail activities and, therefore, could have allowed theft or diversion of property to go undetected.

In May 1986 we issued a report to the Chairman, Senate Task Force on DOD Inventory Management, on our review of inventory management practices in the Army, Air Force, Navy, Marine Corps, and Defense Logistics Agency. We reported that many long-standing problems in the Air Force supply system continued to exist.[5] For example:

- Inventory adjustments were growing.
- Causative research was not identifying causes of inventory variances.
- Supply transactions were recorded inaccurately.
- Controls over pilferable items were weak.
- Physical security was inadequate.

[3]Management of Wholesale Inventory Adjustments, Air Force Audit Agency (Sept. 12, 1984).

[4]Special Inspection of Supply System Vulnerability, Office of Air Force Inspector General (Feb. 26, 1986).

[5]Inventory Management: Problems in Accountability and Security of DOD Supply Inventories (GAO/NSIAD-86-106BR, May 23, 1986).

Air Force Logistics Command Inventory Improvement Initiatives

In response to prior GAO, DOD Inspector General, and Air Force audits, AFLC developed a long-range systematic approach to inventory management problem resolution, and identified a number of initiatives that required management attention. The Command developed a readiness-oriented approach to its inventory program whereby the frequency of physical inventory actions would be determined by the importance of assets as measured by

- weapon system applicability,
- criticality,
- level of demand activity, and
- time since last inventory.

The Air Force Inventory Improvement Plan evolved from this approach.

According to the Air Force, the Inventory Improvement Plan is

"... designed to change the inventory program focus from periodic measurement and correction of the accountable balance to a management tool which will identify deficient logistics system processes and procedures."

The Air Force concluded that it should modernize its automated data processing (ADP) equipment, prioritize inventory-taking by weapon system, and emphasize personal accountability.

In 1984 Arthur Young and Company studied Air Force physical inventory processes and assisted in defining needed improvements. Its January 25, 1985, report concluded that AFLC's Inventory Improvement Plan was a conceptual framework, which would effectively address problems in the physical inventory process. In addition to the major ADP systems modification, this plan provides for changes in policy, training, accountability, quality assurance, storage operations organization, and inventory measurement and analysis.

Because most of the ADP systems and many of the other planned changes were not implemented at the time of our audit, we could not evaluate their effectiveness. The Air Force believes improvements will be seen when the changes and new systems are implemented. However, until the new systems are operational, problems will continue to exist and will need to be addressed.

Objectives, Scope, and Methodology

The objectives of our review were to determine whether the physical inventory procedures of the Air Force ensure that inventory records accurately reflect on-hand assets and whether causative research is adequate and identifies the underlying causes of discrepancies between inventory counts and recorded balances. Because Air Force inventory data indicated that the Air Force has adequate safeguards, procedures, and controls to maintain inventory records accuracy and accountability over controlled items (see ch. 3), our review concentrated on noncontrolled items.

To evaluate Air Force physical inventory procedures, we reviewed and compared DOD and Air Force policies and procedures, both established and evolving, that deal with supply management. We reviewed management practices related to conducting inventories, researching variances and adjusting inventory records. We conducted our audit work at the following locations:

- Headquarters, Air Force Logistics Command, Wright-Patterson Air Force Base, Dayton, Ohio;
- San Antonio Air Logistics Center, Kelly Air Force Base, Texas;
- Sacramento Air Logistics Center, McClellan Air Force Base, California; and
- Ogden Air Logistics Center, Hill Air Force Base, Utah.

In examining Air Force policies at the wholesale level, we discussed current and evolving policy and procedures with the Chief, Materiel Processing Division, Directorate of Supply at AFLC, as well as with the Director of Distribution and various other officials at the San Antonio, Ogden, and Sacramento ALCs. Our work also included the examination of Air Force reports related to evolving systems. We reviewed:

- Arthur Young and Company, Study of Air Logistics Center Inventory Procedures;
- Arthur Young and Company, Inventory Prioritization Model;
- AFLC, "Inventory Game Plan, Attacking the Problems;" and
- a variety of AFLC inventory initiatives.

The Air Force conducts annual 500-item random sample inventories of noncontrolled items at each ALC to determine inventory accuracy. To determine whether there have been improvements in inventory accuracy, we reviewed and analyzed the methodology and results of four of these random sample inventories. We found the methodology provided meaningful estimates of inventory accuracy. Accordingly, we generally

relied on the results of the sample inventories as the basis for our evaluation. We also reviewed the results of physical inventories for controlled items and the procedures under which they were conducted. Because controlled items are intensively managed and inventoried at least once a year, we decided to rely on Air Force inventory data for our analysis of these items.

To determine whether causative research was effective, we reviewed and compared DOD policies and procedures and current and proposed Air Force procedures. We discussed current practices and guidelines with logistics officials at AFLC and the San Antonio ALC. We analyzed data from management reports for the fiscal years 1984-86. We also examined the quality assurance program at the San Antonio ALC and discussed quality assurance programs at the other two centers we visited. Finally, our evaluation included discussions with various Air Force officials on the importance of causative research procedures and uses made of the reported information.

We observed physical security procedures at three ALC's to determine compliance with policies and also discussed security requirements and limitations with appropriate center officials.

At the wholesale level, we reviewed the annual statements required under the Federal Managers' Financial Integrity Act of 1982 to determine whether inventory accuracy had been previously reported as a material weakness, and if so, what had been done to correct it.[a]

Our review was conducted between June 1986 and September 1987 in accordance with generally accepted government auditing standards.

Financial Integrity Act Statements Identify Inventory Control as Problem

In its fiscal year 1986 annual statement required under the Federal Managers' Financial Integrity Act of 1982, the San Antonio ALC's report cited inadequate manpower as causing work load backlogs and untimely processing of documentation in its inventory control activities. The report said that these factors contributed to a high incidence of imbalance between inventories and record balances and increased the supply system's vulnerability to fraud, waste, and abuse. The ALC's report stated that corrective actions began in May 1984 and were scheduled for completion in July 198 . AFLC's annual assessment cited backlogs and

[a]The Federal Managers' Financial Integrity Act of 1982 requires agency heads to report material weaknesses in internal controls in annual assessment reports to the President and Congress.

timeliness as Command-wide issues and reported that the problems would be solved by December 1986. During our review, we found that work load backlogs at San Antonio had been significantly reduced.

AFLC also reported weaknesses in control processes that could result in inaccurate records and possible theft or diversion of property. To correct them, AFLC identified numerous actions, including implementing an automated warehouse system and a new stock control and distribution system. These actions were eventually categorized into eight objectives and are contained in the Air Force Inventory Improvement Plan. Some of them are long range, with one not scheduled for completion until January 1989. As of September 30, 1986, AFLC reported 3 of the 8 objectives completed.

The Air Force's Financial Integrity Act report for fiscal year 1986 did not cite the manpower problem reported by the San Antonio ALC but did say that inventory management control weaknesses were problems. According to the fiscal years 1986 and 1987 reports, the control weaknesses should be corrected by January 1989, which is consistent with AFLC's schedule.

Impact of Policies and Practices on Air Force Inventory Accuracy

The Air Force has implemented a variety of policies and practices to improve inventory management and the accuracy of inventory reports. Some of these policies, such as relying on random samples to measure inventory accuracy and limiting the practice of reversing previous adjustments, could lead to more accurate inventory reporting. However, the Air Force's random sampling methodology overstates its inventory accuracy.

In addition, Air Force policies on making inventory adjustments and conducting causative research may lead to unnecessary errors in the inventory system. The change in Air Force research and adjustment policies are inconsistent with DOD's policies, and the Air Force did not obtain approval from DOD to implement this change.

Air Force Efforts Could Improve Inventory Accuracy Measures

The Air Force has adopted a new statistical sampling approach to physical inventories and developed new measures of inventory accuracy, which could result in more accurate inventory management performance reporting.

Recognizing that cumulative data reported in the ICE report are not necessarily representative, AFLC conducts annual random sample counts of noncontrolled items to obtain inventory accuracy measurements representative of all the supply records. Five hundred randomly selected noncontrolled items from each ALC are inventoried each year. Additionally, although the Command reports dollar adjustment statistics to the Air Force headquarters and DOD, it does not believe these statistics alone are meaningful measures of overall records accuracy because they are not representative of the total inventory. Therefore, it has developed several new management indicators to improve the usefulness of inventory statistics. For example, to address the problems relating to excluding some discrepancies from inventory accuracy measures and not having information on the magnitude of variances, the Air Force adopted two new accuracy measures:

- Initial Item (Record) Accuracy measures the number of items with accurate counts as a percentage of all items counted. This calculation considers all errors as inaccuracies, regardless of dollar value and conclusion reached after research—the records are either right or they are wrong.
- Initial Unit Accuracy measures the accuracy of units of items and is based on a comparison of the quantity of units counted with the total recorded quantity. For example, an item with 1,000 units on record and

999 units on hand would have zero initial item accuracy, yet would be 99.9 percent accurate on a unit basis.

These measures, especially unit accuracy, although not now required by DOD, provide useful additional information with which to evaluate inventory management. The Air Force's new physical inventory approach and accuracy measures could result in better inventory accuracy reporting; however, we are concerned that the sampling methodology used to select items for inventorying leads to results that tend to overstate the Air Force's inventory accuracy.

Sample Methodology Overstates Inventory Accuracy

The Air Force conducted its first sample physical inventories in 1983 and, with the exception of 1984, has continued the practice. The 1983, 1985, and 1986 sample methodologies required or permitted inclusion of items having zero balances on the inventory record and no identified warehouse location where an inventory could be taken. Because such zero-balance, no-location items were automatically assumed to be correct, their inclusion in the sample overstated inventory accuracy.

The 1983 and 1985 sampling procedures were essentially the same and allowed the inclusion of items with zero balances on the accountable record and no location on the warehouse locator record. The samples, according to Logistics Command instructions, required that 250 items be selected from the accountable record; the second half would be selected at the location. According to Command instructions, of the 500 items selected at each ALC, the 250 selected from the record were to include zero-balance items that would not have a location. If the zero-balance items selected had no location listed in the record, they would be considered accurate for purposes of the sample. Data on the actual number of zero-balance items in the 1983 sample were not available. In the 1985 sample, there were 430 items with zero balances Command-wide; however, data were not available as to how many of these had no warehouse location on the inventory record.

In 1986 the sampling procedure changed, allowing the inclusion of more items with a zero record balance. The 1986 sample included 733 zero-balance items, 29 percent of the total sample, and almost all of them had no warehouse location to inspect. Again, the zero balances of those items, where there were no locations to be physically checked, were automatically considered as accurate, even though this could not be verified. To illustrate, 408 of the 1,500 items sampled at the three centers we visited had zero balances. Of these, 405 (99 percent) had no location

on the warehouse records and were assumed to be accurate. The other three items had a warehouse location recorded and therefore were verifiable.

We believe the Air Force has adopted a reasonable sampling design methodology; however, inclusion of zero-balance, no-location items in the records portion of the sample distorts the results. Records for zero-balance items with a location can be verified through physical inventories. Physical inventories of zero-balance items with no location are assumed correct, even though there is no way to accurately verify the legitimacy of the record; therefore, the record accuracy rate may be overstated.

Air Force Reverses Adjustments on Limited Basis

Under current DOD policy, if research of a physical inventory adjustment can establish that the adjustment was caused by a previous erroneous transaction, the inventory adjustment is reversed. Such reversals are required to be reported to DOD each quarter. The Air Force has adopted a more restrictive policy.

In 1981 the Air Force Audit Agency criticized AFLC for arbitrarily reversing prior physical inventory adjustments and concluded that, although the reversals greatly reduced reported adjustments and improved inventory accuracy statistics, they tended to preclude reporting some problems to management. In July 1985 the Air Force decided to change its policy on reversing adjustments. In doing so, it noted that reversing prior inventory adjustments subjected the Air Force to criticism and unnecessarily complicated reporting and evaluation of the inventory processes.

In October 1985 the Air Force stopped using reversals to correct prior erroneous inventory adjustments. AFLC decided, however, that data processing errors occurring within 30 days, such as keypunch errors, should be corrected rather than processed as an error in records. Therefore, it continued to permit corrected transactions in those limited cases. Erroneous inventory records due to unresolved inventory discrepancies and data processing errors that occur outside the 30-day window must be corrected by an inventory adjustment and counted as an error in computing inventory accuracy.

We agree that reversing inventory adjustments is inconsistent with ensuring complete inventory accuracy reporting. Although reversals may be necessary to maintain accuracy in documentation and records,

they should not be used to exclude adjustments from the computation of an activity's accuracy measures.

Air Force Research and Adjustment Policy Differs From DOD's

The Air Force has adopted a research and adjustment policy for noncontrolled items that differs from DOD's. The Air Force has not obtained authority from DOD to implement this change.

DOD Manual 4140.22-M prescribes DOD policy on research criteria for record variances. The DOD criteria states that minor variances (valued at less than $800) for noncontrolled items do not require causative research prior to being adjusted and are not included in ICE report record accuracy performance measures. Noncontrolled item variances valued from $800 to $16,000 (major variances) require causative research on a sample basis. Major variances valued at more than $16,000 for noncontrolled items and all variances for controlled items require 100-percent causative research.

Prior to June 1986, the Air Force, in accordance with DOD policy, automatically adjusted inventory records for noncontrolled item inventory variances of $800 or less without research to ensure that the adjustments were accurate. In 1984 AFLC contracted with Arthur Young and Company to conduct a study of current supply policies, procedures, and initiatives to determine if they addressed problems previously identified by audit agencies. In its January 25, 1985 report, Arthur Young recommended that ". . . Instead of allowing machine generated adjustments for discrepancies of less than $800, no adjustment should be made without research."

Based on this study and an analysis of a count performed on 5 percent of the San Antonio ALC's assets in 1984, the Air Force decided to change its research criteria. A new level of discrepancy research was introduced—validation research. The new research involved identifying unprocessed (infloat) transactions that may have occurred during the inventory process (that is, during the 30-day period from the time an item was frozen for a count to the time the count was completed) that could explain the variance. In June 1986 the Air Force adopted the research and adjustment criteria shown in table 2.1 for noncontrolled items. Although DOD requires components to obtain a waiver to deviate from prescribed inventory management policies and procedures, the Air Force did not obtain such approval to implement this change.

Table 2.1: Air Force Noncontrolled Item Research and Adjustment Criteria

	Value of variance		
Variance	**$0 - $4,999**	**$5,000-$16,000**	**$16,000 up**
Less than or equal to 10 percent of units inventoried	No research No adjustment	Validation[a] research Adjust records	Causative research Adjust records
Greater than 10 percent of units inventoried	Validation[a] research Adjust records	Validation[a] research Adjust records	Causative research Adjust records

[a]Variances in these categories are to be subjected to sample causative research.

These new criteria mean that noncontrolled item inventory records can remain out-of-balance by as much as 10 percent and $4,999 without being researched. AFLC officials believe that such variances are unlikely to affect customer support. The Command believes these new criteria support the Air Force emphasis on mission support.

In support of the new research and adjustment criteria, an AFLC official cited data from the analysis of the 1984 inventory at the San Antonio ALC which, among other things, arrayed variances by dollar values. This data showed that only 11 of 325 inventory adjustments reviewed had any immediate impact on procurement; that is, the adjustments caused either a procurement or a procurement cancellation. However, the analysis did not consider the significance of the 11 adjustments from a budget or mission perspective. Nor did it consider the longer term implications of permitting known inventory record inaccuracies to remain uncorrected for several years. In summary, the analysis did not measure the overall impact of the new research and adjustment criteria.

Because Air Force item managers rely upon the recorded on-hand balances to determine how many additional items to procure, we are concerned that not researching some variances and allowing records to be potentially over or understated by up to 10 percent could affect the requirements computation process and possibly result in unnecessary procurements or shortages of material. We do not believe that the limited analysis of a single inventory is a sufficient basis to support the change to the adjustment and research policies. We also question the Air Force's decision to adopt a policy which is different from DOD policy without specific authority from DOD.

Air Force Inventory Accuracy

In 1983 we reported that the magnitude of inventory record inaccuracies within DOD was not conducive to economical and effective supply support, and that continuing record inaccuracies frequently have an adverse impact on supply availability and force readiness. Recognizing the need for more accurate records, AFLC developed initiatives to improve its overall inventory control. Although considerable progress has been made, record inaccuracies continue to be a problem.

Controlled Item Inventory Is Accurate

Air Force regulations and operating instructions require frequent (at least annual) and complete inventories and record reconciliations for classified, sensitive, and pilferable materials (controlled items). In its January 1985 study of ALC inventory procedures, Arthur Young concluded that this intensive management provided adequate safeguards, procedures, and controls to maintain inventory accuracy and accountability for these items and that procedures were effective and appropriate.

We reviewed the results of controlled item counts at the San Antonio Air Logistics Center for fiscal years 1984, 1985, and 1986. We found, as shown in table 3.1, that the initial (before research) and final (after research) record accuracy rates for controlled items for those years were high.

Table 3.1: Inventory Record Accuracy Rates for Controlled Items

Fiscal years in percent

	Fiscal year					
	1984		1985		1986	
Type of item inventoried	Initial	Final	Initial	Final	Initial	Final
Classified	94 8	99 9	96 9	99 7	96 3	99 8
Sensitive/pilferable	91 2	98 3	90 1	99 2	92 7	98 5

Inventory Accuracy for Noncontrolled Items Is Improving

The Logistics Command recognized the need for improved measures of the (1) accuracy of its noncontrolled item inventory and (2) effects of its initiatives to improve record accuracy. To achieve this, the Command began conducting annual statistical inventories of 2,500 randomly sampled noncontrolled items, 500 from each logistics center. To date, the Logistics Command has gathered data from annual samples in 1983, 1985, 1986, and 1987.

As table 3.2 shows, sample data for 1983 were used to analyze record and dollar accuracy. In 1985 the analysis was expanded to include unit (quantity) accuracy.

Table 3.2: AFLC Accuracy Measures From Fiscal Years 1983, 1985, 1986, and 1987 Statistical Samples

Fiscal years in percent

	Fiscal year			
	1983	1985	1986	1987
Initial record accuracy	72.1	69.5	77.3	78.3
Initial unit accuracy	—[a]	78.2	82.4	94.2
Initial dollar accuracy	87.0	78.9	85.0	87.1
Dollar accuracy after research	95.9	93.3	96.7	93.9

[a]Data were not collected for unit accuracy in 1983.

These sample results show that accuracy rates have generally improved; however, as previously noted, we believe the results of the samples overstate inventory accuracy because zero-balance, no-location items were included. To illustrate the impact of including items having no recorded balance and storage location in the accuracy rate, we recalculated the 1985 and 1986 initial record accuracy for the Logistics Command, excluding zero-balance items. We excluded all zero-balance items where there was no property on hand at the location for illustrative purposes only because (1) almost all the zero-balance items we reviewed (405 of 408 items) at the three centers we visited had no storage location, (2) accuracy rates were reported on a Command-wide basis rather than by ALC, and (3) Command-wide data on zero-balance items contained in the samples did not identify whether storage locations were listed on the sampled records. Table 3.3 shows initial record accuracy rates with and without zero-balance items.

Table 3.3: AFLC Initial Record Accuracy

Fiscal years in percent

	Fiscal year		
Initial record accuracy	**1983**	**1985**	**1986**
With zero-balance items	72.1	69.5	77.3
Without zero balance items	—[a]	63.1	67.9

[a]Data on zero-balance items were not separately accumulated during this statistical sample.

Reporting Requirements Adversely Impact Accuracy Measures

Air Force Manual 67-1 requires ALCs to report monthly data on the combined results of all inventories to the Logistics Command. The Logistics Command consolidates data from these reports and prepares the ICE report, which is distributed to Air Force headquarters and ultimately to DOD as required by DOD Manual 4140.22-M. The report is prepared quarterly and annually and contains data on Air Force inventories, including inventory value and measures of inventory accuracy. The Air Force reports inventory management data in accordance with DOD requirements; however, we believe inventory accuracy measures resulting from those reporting requirements may misstate actual accuracy rates.

Inventory Accuracy Data Excludes Some Variances

DOD requires inventory records accuracy—how often a record and a physical count agree—to be reported on the ICE report. Record accuracy is calculated on the basis of only variances valued at $800 or more. This rate states whether the record is right or wrong and does not measure the magnitude of the error in terms of value or quantity. Inventory record accuracy measures that exclude low value variances overstate inventory accuracy. Also, minor variances of $800 or less may involve items that are critical to mission readiness. In fiscal year 1986 the Air Force reported 56,510 major variances on about 323,711 physical inventories it conducted resulting in a record accuracy rate of 82.5 percent. However, in conducting these inventories, the Air Force also experienced 137,977 minor adjustments that were not reported. If all adjustments were included in determining record accuracy, the Air Force record accuracy rate would have been about 40 percent.

Differences between the recorded quantity and the quantity actually counted represent inventory record inaccuracies regardless of the value of the difference. Consequently, DOD has proposed that the services and DLA implement new procedures where all variances will be considered in calculating record accuracy rates. The proposed procedures would provide a more comprehensive assessment of accuracy by recognizing all record inaccuracies.

Unscheduled Inventories Lower Overall Accuracy Rates

Unscheduled physical inventories address specific problem items and represent the bulk of the inventories performed at the ALCs. In fiscal year 1986 the five ALCs performed about 323,711 inventories. Scheduled physical inventories constituted 24.1 percent (78,003) of the work load, while unscheduled inventories accounted for 75.9 percent (245,708). In fiscal year 1986 the San Antonio ALC completed 117,032 physical inventories of which 94,286 (80.6 percent) were unscheduled inventories.

Because unscheduled physical inventories are problem-oriented, they generally result in much lower accuracy rates than scheduled inventories. For example, management reports at the San Antonio center show that center personnel conducted 16,948 unscheduled inventories during the last quarter of fiscal year 1986. Comparison of these counts with the record resulted in 10,322 reported variances for an accuracy rate of 39 percent. In contrast, the ALC conducted scheduled physical inventories of 16,039 items during the same period and reported 88 percent accuracy. Combining the results of unscheduled and scheduled inventories together in the ICE report causes inventory accuracy to be understated.

Item Activity Impacts Accuracy Rates

A significant portion of the Air Force inventory consists of inactive items, items with no issues in a 12-month period. For example, the results of a 1984 inventory of 5 percent of the material at the San Antonio ALC showed that 6,643, or 45 percent, of the 14,857 line items counted had no issues in the previous 12 months. These results also showed that the record accuracy rate for items with no activity was 63.1 percent, while the rate for items with one or more transactions in the prior year was 44.9 percent.

A 1986 complete count of F-100 engine parts at San Antonio further illustrates the relationship between item activity and record accuracy. The F-100 engine powers the F-15 and F-16 aircraft—two of the Air Force's first line fighter aircraft. Parts for the engine are generally high-demand and, therefore, very active items. The count included 7,878 F-100 items and revealed an initial item accuracy rate of only 33.4 percent. This means the recorded balances and the quantity counted differed for two of every three items inventoried.

Although the results of all inventories should continue to be reported, the results of active item inventories are of particular importance; active items are more important in supporting the Air Force mission. Inclusion of a large number of inactive items in reported inventory data tends to overstate accuracy rates for active items. We believe the results discussed above indicate the need for further improvements in accountable record accuracy for active items. AFLC officials agreed that the active items are the most important. They informed us that their prioritization model will use item activity as a key consideration in selecting items to inventory.

Inaccurate Inventory Records Cause Erroneous Inventory Management Decisions

Accurate supply records are essential to the economical and effective supply support of U.S. military forces. Inaccurate records can result in critical supply shortages, prolonged delays in filling requisitions, unnecessary procurements, maldistribution of supplies, and accumulation of excess material. We found that physical inventories and inventory adjustments intended to correct the records, were often themselves incorrect and actually created errors in the inventory records.

AFLC management reports for fiscal year 1986 show that erroneous adjustments were the most frequently cited cause for inventory inaccuracies when the cause could be identified. Further, data from the San Antonio ALC for fiscal years 1984-86 shows that erroneous adjustments were the first or second most prevalent identified cause of inaccuracies.

In 2 of 18 high dollar record adjustments that we reviewed at the San Antonio ALC, we found inaccurate records prevented managers from knowing how many items were available and caused erroneous management decisions. This led to an unnecessary procurement in one case and to a shortage of mission-essential parts in the other case.

- In mid-1985 an item manager processed an erroneous inventory adjustment voucher to reduce the recorded balance of an F-100 engine retainer seal from 112 to 0. The adjustment, valued at $4,430, caused the automated requirements system to produce buy notices, and the inventory manager responded by initiating procurements of 70 seals. In March 1986 the seals were located and reentered in the inventory records. However, it was too late at that time to cancel procurement of the additional 70 assets. As a result of the erroneous adjustment and the subsequent procurement, there were 180 seals on hand or due in as of September 1986, and only 2 seals were issued in the last year.
- In October 1985 ALC supply personnel processed an erroneous adjustment voucher to decrease the on-hand balance of F-100 engine combustion chambers by 15 units. Because the Air Force was procuring 1,043 of these chambers, the erroneous decrease had little effect on procurement. However, the Air Force was unable to fill requisitions for these mission-essential parts until March 1986 when the 15 chambers, valued at $56,000, were found and reentered into the records after an inventory of the ALC's frequently procured items.

Inventory Management Practices Could Be Improved

While inventory accuracy measures are important indicators of the status of inventory management, related inventory management practices, such as causative research, trend analysis, and physical security, are also important elements in achieving overall inventory management effectiveness.

Our review indicated that the Air Force continues to experience problems in performing adequate causative research. These research efforts end without conclusive results in a substantial number of cases. Although the primary causes of inventory variances have received considerable management attention, the same causes are identified as problems year after year. AFLC regulations require a trend analysis of the results of causative research as a further means to evaluate inventory management problems; however, analysis is not routinely conducted at the ALCs. In addition, ALCs need to improve physical security over inventory assets.

Causative Research Not Contributing to Records Accuracy

Causative research is the analysis that Air Force item managers perform to determine the causes of inventory inaccuracies. The objectives of this research are to (1) provide managers with indications of failures in control systems and of potential areas for improvement, (2) reduce similar discrepancies in the future, (3) ensure that proper adjustments were made to the records, and (4) identify trends of systemic problems so that corrective actions can be taken. The Air Force continues to experience problems in performing adequate causative research.

Item Managers Are Not Performing Adequate Research to Determine Causes of Inventory Variances

Air Force item managers continue to adjust inventory records without performing adequate research to identify the primary cause for discrepancies. Air Force policy allows item managers to adjust the accountable records when validation research of unprocessed transactions has been done. Often, research ends at this point and does not appear to be sufficiently thorough to identify the causes of variances. The risk in this policy is that the records may be erroneously adjusted, possibly resulting in (1) apparent shortages of needed items which are actually on hand or (2) excess procurements.

Our evaluation of validation research at the San Antonio ALC showed that when research beyond the basic transaction validation is done, causes are identified and adjustments are often unnecessary. For example, following inconclusive validation research, a San Antonio inventory

manager processed an inventory loss adjustment to reduce the accountable record balance for a valve from 14 to 0. However, subsequent quality control checks, which involved more extensive research, disclosed that 15 valves were in the warehouse and that the original variance was caused by inaccurate warehouse location records. The adjustment therefore that should have been made was to increase the record balance by 1 unit rather than decrease it by 14 units.

In fiscal year 1986 research of inventory variances Command-wide was inconclusive 59 percent of the time. The Oklahoma ALC reported 42 percent inconclusive research; Ogden, 56 percent; San Antonio, 76 percent; Sacramento, 26 percent; and Warner-Robins, 73 percent. Air Force criteria requires validation research for all variances between $5,000 and $16,000, and for variances below $5,000 when more than 10 percent of the units inventoried are involved. Validation research involves only a review of transactions occurring during the inventory period and does not encompass a detailed record analysis as is done under causative research. According to Command officials, validation research does not identify causes for most variances. At the time of our review, although sample causative research was required for many variances under $16,000, it was not being done. When brought to their attention, AFLC officials said that AFLC Regulation 67-9 has been changed to require ALCs to identify and report on the results of sample causative research on a regular basis in order to provide assurance that this research is being done when required.

The Chief of the San Antonio ALC organization responsible for variance research stated that, as a result of our 1983 report, steps have been taken to improve causative research, and progress has been made. However, the official acknowledged that a heavy work load, coupled with a shortage of well trained researchers resulting from high turnover levels, has adversely impacted the quality of causative research and that research effectiveness still needs to be improved.

Our work at the San Antonio ALC confirmed that validation research does not identify the causes of most variances. Reports for July and August 1986 show that San Antonio inventory managers conducted validation research on 8,042 variances, and the findings were inconclusive for 7,953, or 99 percent, of the variances. However, data also show that the ALC's causative research for the same period was also largely ineffective, with inconclusive findings in 504, or 77 percent, of the 650 variances researched.

Analysis of research results reported by San Antonio for fiscal years 1984 through 1986 showed little change in the most frequently reported causes of variances. In fiscal year 1986 the most frequently reported errors at the San Antonio ALC were also generally the most frequently reported errors throughout the AFLC. These included erroneous adjustments posted, shipments not made, unrecorded or incorrect storage locations, and erroneous inventory counts made. Although the primary causes for inventory variances in the Air Force have received considerable management attention, the same problems continue to occur year after year. We, therefore, believe that the Air Force needs to reassess its causative research criteria and recent management initiatives to find out why the same causes of inventory discrepancies continue to occur.

Trend Analyses Could Be Used to Highlight Inventory Problems

AFLC regulations require trend analyses so that management can review the data and recommend actions to reduce variances. The Director of Distribution at the San Antonio ALC informed us that causes for supply and distribution problems are discussed in their management meetings. Our review of minutes of the meetings through April 1986 shows that statistical data on identified inventory error cause was presented, but there was no indication that trend analyses were performed on the data.

AFLC only recently began consolidating ALC data on error causes. A Command official stated that AFLC recently acquired the computer capability to accumulate information from all the logistics centers and will eventually be able to report on predominant problem areas.

Analyses of error causes may identify trends that could be valuable tools for managers. Logistics Command officials cited the need for each ALC to analyze causes of variances on a monthly basis. We believe that trend analyses could yield valuable insights into inventory accuracy problems, including increasing or decreasing trends in inconclusive findings resulting from validation and causative research.

Physical Security Over Inventories Needs to Be Stressed at ALC

Physical security of inventory assets is an integral element of inventory management. Without the necessary physical security measures, opportunities exist for the unauthorized removal of government supplies. Physical security at the centers we visited appeared adequate. However, improvements need to be made regarding fencing of industrial areas and controls over vehicle parking near warehouses.

The Directorate of Distribution is responsible for the storage and security of material at each logistics center. In January 1982 AFLC initiated a change to the security regulation that defined an industrial area as an area where material that directly supports the Logistics Command mission is housed, used, received, and processed or stored. It stipulated that such areas require security fencing and that access to the areas should be controlled through the use of personnel badges. Perimeter fences and employee badges can help reduce the risk of intrusion and theft by unauthorized personnel. However, these security measures were not in place at the ALCs we visited.

ALCs are tenants on fenced Air Force installations that limit public access through guarded gates. The inventory storage facilities at the three logistics centers we visited were not consolidated at central locations. The San Antonio ALC had additional security fencing in place and used personnel badges to control access to its primary storage sites. However, privately owned and contractor vehicles were permitted to park adjacent to warehouse facilities inside the fences. Parking adjacent to warehouses was also permitted at the Ogden and Sacramento ALCs. Storage facilities at these two centers were not separately fenced and the ALCs relied primarily on identification badges to limit access to authorized personnel. One of the centers had plans to install perimeter fencing to enclose its primary storage facilities, and the other center believed that its buildings were too dispersed and it was not feasible to enclose them with fencing. Employees are, out of necessity, permitted to freely come and go during work hours and have been allowed to park their privately owned vehicles in close proximity to their primary work site. These conditions increase the vulnerability of government property to employee theft. For example, in June 1987 a federal grand jury indicted four warehouse workers at the San Antonio ALC on theft charges. According to Air Force investigators, four individuals operating independent of each other and working in the receiving, packaging, and shipping areas of distribution were allegedly responsible for several thefts of government material.

Suspected thefts were not identified by analysis of inventory record discrepancies, but rather were revealed to the Air Force Office of Special Investigation agents by another ALC employee. Subsequent undercover investigative work resulted in federal warrants charging that the four defendants stole merchandise valued at over $260,000. Air Force investigators said that the defendants allegedly carried contraband to their vehicles or drove their vehicles right up to the loading dock to steal merchandise.

The importance of physical security of government material needs to be continually stressed. Although there may be some limitations to the extent that storage sites can be secured, primary storage facilities, if not all storage facilities, should be protected by security fencing.

Conclusions and Recommendations

Conclusions

Accurate supply records are essential to economical and effective supply support of U.S. military forces. Inaccurate records can result in critical supply shortages, prolonged delays in filling requisitions, unnecessary procurement of stock, maldistribution of supplies, and accumulation of excess stock.

We believe that reversing prior inventory adjustments is inconsistent with ensuring complete inventory accuracy reporting. Reversals may be necessary to maintain accuracy in documentation and records; however, they should not be used to exclude adjustments from the computation of an activity's accuracy measures. The Air Force has elected to reverse prior inventory adjustments only on a limited basis and, therefore, has discontinued the practice of reversing most adjustments.

Without obtaining prior DOD approval, AFLC has adopted a research and adjustment policy that is different from the DOD policy. New Air Force research criteria allows variances to not be adjusted when they are under $5,000 and do not involve more than 10 percent of the recorded quantity balance. Based on a limited analysis as part of their 1984 inventory at the San Antonio center, Air Force officials believe these imbalances are unlikely to affect customer support. We do not believe the Air Force has adequately assessed the impact of such out-of-balance records on purchases or mission accomplishment.

AFLC believes that gross inventory adjustment statistics, required by DOD, do not provide a meaningful measurement of overall inventory accuracy. DOD-required statistics are computed by combining the results of both scheduled and unscheduled physical inventories. Since unscheduled physical inventories are performed on known problem items, they generally result in lower accuracy rates. Three-fourths of the physical inventories performed by the ALCs are unscheduled; therefore, the DOD-required statistics are biased and not representative of the total inventory. DOD advised us that in revising its inventory control program, it plans to require annual statistical samples of the services and Defense Logistics Agency as a basis for measuring and reporting inventory accuracy.

As a result of these shortcomings, AFLC adopted new statistical sampling methodologies and measures of inventory accuracy. We believe that the use of statistical samples provides significantly better measures of inventory accuracy, and that the addition of initial record accuracy and unit accuracy measures provides useful management information. We note that the Air Force recognizes the value of statistical sampling as a

better way to evaluate inventory management improvement. However, we are concerned that the inclusion of large numbers of zero-balance, no-location items in the samples overstates inventory accuracy.

Too often Air Force item managers adjust supply records without performing adequate research to identify the causes for discrepancies. Experience shows that when comprehensive research of variances is done, adjustments are often unnecessary. Often, errors are found to exist in physical counts or warehouse records rather than the accountable records. Many variances do not receive causative research and for those that do, the underlying cause for the variance, in many instances, is not disclosed. Inventory problems that are identified through research recur year after year, suggesting that underlying causes have not been identified and corrected.

AFLC has adopted an Inventory Improvement Plan, which relies heavily on the development and implementation of new data processing systems to bring about overall improvements in inventory records accuracy. The last of these systems is not expected to be operational for a number of years.

Physical security of inventory assets is also an integral element in effective inventory management. Security problems we observed and recent evidence of losses through theft indicate that continued emphasis on security is warranted.

The Air Force considered inventory management controls to be a material weakness in its fiscal year 1986 Financial Integrity Act statement, and in its fiscal years 1986 and 1987 reports laid out a plan to correct the problem by October 1989. Although our review indicates that improvements are being made and more are planned, we believe this area should continue to be considered as a material weakness, and corrective actions should be reported in the fiscal year 1988 Financial Integrity Act report by the Secretary of the Air Force.

Recommendations

We recommend that the Secretary of Defense, in requiring annual statistical samples as the basis for measuring and reporting inventory accuracy in the inventory control effectiveness report, provide that these samples exclude zero balance items where there is no record of a storage location.

We also recommend that the Secretary of the Air Force direct the Commander, AFLC, to

- reevaluate its research and adjustment policies, especially the policy of not adjusting discrepancies under $5,000, which do not involve more than 10 percent of recorded items, to ensure that they do not have adverse effects on inventory management. If the policy is determined to be supportable, ensure that approval to implement it has been obtained from DOD;
- continue emphasizing the need for effective causative research that determines underlying causes of inventory discrepancies and systemic problems. Variances currently under the monetary criteria for causative research should be sampled as further input to identifying and correcting systemic problems; and
- strengthen physical security at ALCs by providing fencing around warehouses where practical, especially primary storage facilities, and not allowing parking of contractor or privately owned vehicles adjacent to warehouses.

Additionally, we recommend that the Secretary of the Air Force reassess this area in its next Financial Integrity Act statement and continue executing and reporting progress on the milestones for correction of the material weakness identified in the fiscal year 1986 Financial Integrity Act statement.

Agency Comments and Our Evaluation

DOD concurred or partially concurred with all of our findings and recommendations and provided information on actions taken or planned to correct the problems and implement our recommendation. DOD officials suggested technical corrections and clarifications which have been incorporated in the report as appropriate.

DOD agreed that the Air Force's new sampling approach and inventory accuracy measures could result in more accurate inventory management performance reporting. It did not agree that the inclusion of items with zero balances and no identified storage location in the sample would overstate Air Force inventory accuracy as it is reported to DOD. DOD noted that the results of the Air Force sample are intended for internal management use and do not effect performance data currently provided to DOD. The Air Force contends that the sampling approach allows them to monitor the number of zero-balance, no-location items to assure that limited storage space is made available as quickly as possible for incoming items.

We agree that the Air Force's current sampling technique does not impact performance data reported to DOD since the sample results are not currently provided to DOD; however, the inclusion of zero-balance, no-location items in a sample distorts the results. We also agree that empty storage locations need to be identified and verified quickly, and DOD's required location audits should do just that. However, verification of zero-balance, no-location items is not possible; therefore, these items should not be included in samples used to determine inventory accuracy. DOD stated that it is establishing a DOD-wide requirement for statistical sample inventories as a basis for measuring inventory accuracy and for purposes of consistency throughout the Department, and that our recommendation should be directed to the Secretary of Defense. We agree and have modified the report.

Although DOD did not agree with our conclusion that the Air Force lacked authority to implement a new research and adjustment policy, it concurred in our draft report proposal that the Commander AFLC reevaluate the policy and, if supportable, obtain authority from DOD to implement the change. DOD's physical inventory control policy is set out in DOD Instruction 4140.35 and implemented through DOD's Military Standard Transaction Reporting and Accounting Procedures (MILSTRAP) Manual. The MILSTRAP manual is very specific when it refers to service changes that conflict with the manual, particularly with respect to changes in DOD's research and adjustment criteria. The manual specifies that DOD components taking exception with the stated criteria will submit alternative research criteria to DOD with justification for the proposed change. According to the manual, new procedures will not be used unless a waiver is approved. DOD agrees that (1) the Air Force did not submit an alternative or justification for the change and (2) DOD did not approve a waiver for the Air Force. DOD noted, however, that the Air Force has provided the Office of the Secretary of Defense with a number of briefings on its research and adjustment criteria, and OSD has requested that the Air Force continue testing and evaluating the criteria and provide it with the results.

Although DOD agreed that including all variances in the calculation of record accuracy is more comprehensive, it did not agree that DOD and Air Force inventory performance reporting requirements result in the Air Force inventory accuracy measures misstating the accuracy rate. DOD maintains that the Air Force reports inventory management data in accordance with DOD requirements; therefore, it is not misrepresenting accuracy measures as we imply in the report. We have revised the report to clarify our finding to reflect DOD's concerns.

DOD agreed that the Air Force continues to experience problems in conducting adequate causative research and that the effectiveness of causative research can always be improved. It did not agree with the draft report's assertion that there was no evidence that corrective actions have been taken. DOD agreed that effective causative research requires continuous emphasis and noted that the Air Force has taken action to identify and correct problems. DOD expressed the view that our report should more explicitly recognize the Air Force's efforts and after considering these comments, we revised the report.

DOD concurred in our finding and with the intent of our draft report proposal regarding the reporting of this area as a material weakness in the Secretary of the Air Force's fiscal year 1988 Financial Integrity Act statement. However, DOD pointed out that the Secretary of the Air Force is required to continue reporting on material weaknesses that have not been corrected, and the material weakness identified in the fiscal year 1986 statement has not been fully corrected. Our final recommendation has been revised to include this clarification.

Comments From the Deputy Assistant Secretary of Defense (Systems)

ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, D.C. 20301-8000

PRODUCTION AND LOGISTICS
(L/SD)

17 MAR 1988

Mr. Frank C. Conahan
Assistant Comptroller General
National Security and International
Affairs Division
U.S. General Accounting Office
Washington, DC 20548

Dear Mr. Conahan:

This is the Department of Defense (DoD) response to the General Accounting Office (GAO) draft report entitled, "INVENTORY MANAGEMENT: Air Force Inventory Accuracy Problems," dated February 1, 1988 (GAO Code 391580, OSD Case 7526).

The Department of Defense concurs or partially concurs with all the findings and recommendations. Due to strong Congressional and public interest in this area, it is important that the facts surrounding the findings and recommendations are clearly understood.

The Department is pleased that the Air Force efforts have resulted in steady and significant improvements in the accuracy of its inventories. As discussed in the GAO report, both the unit and dollar value accuracy rates of the Air Force inventories are approaching 95 percent. While these improvements are commendable, the Department recognizes that problems still exist that require continued dedication and vigilance. The Department is pursuing its aggressive action plan to continue improving the process.

Additional comments on the findings and recommendations are contained in the enclosure. Other technical corrections and clarifications have been provided to members of your staff. The DoD appreciates the opportunity to comment on the draft report.

Sincerely,

/s/ Jack Katzen
Deputy Assistant Secretary
of Defense (Systems)

Enclosure

GAO DRAFT REPORT - DATED FEBRUARY 1, 1988 (GAO CODE 391580/OSD CASE 7526)

" INVENTORY MANAGEMENT: AIR FORCE INVENTORY ACCURACY PROBLEMS"

DEPARTMENT OF DEFENSE COMMENTS

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FINDINGS

FINDING A: Air Force Inventory Control And Accountability. The GAO reported that the Air Force Logistics Command (AFLC) plans and directs logistics support to all Air Force major commands worldwide through five air logistics centers (ALCs) and that each ALC is responsible for managing assigned inventory items. The GAO noted that, as of September 1986, Air Force wholesale inventories were valued in excess of $21 billion. The GAO found that the Air Force physical inventory program is designed to assist management in maintaining accurate records of assets stored at the ALCs. The GAO reported that the ALCs periodically schedule physical inventories on a complete, sample, or selective basis. The GAO found that controlled items (classified, sensitive, or pilferable) are provided a higher level of inventory protection and are counted completely, either annually or semi-annually, while other items are counted on a sample or selective basis on a 3-year cycle. The GAO noted that the Air Force also performs unscheduled inventories of designated items when suspected discrepancies exist. The GAO concluded that accurate supply records are essential to economical and effective supply support of U.S. military forces and that inaccurate records can result in critical supply shortages, prolonged delays in filling requisitions, unnecessary procurement of stock, maldistribution of supplies, and accumulation of excess stock. (pp. 9-12, pp. 37-39/GAO Draft Report)

Now on pp. 2, 8-10, 23-25, and 31.

DOD RESPONSE: Concur. The DoD Inventory Control Program is designed to ensure that DoD material is available to satisfy customers' requirements in a timely and cost effective manner. The dollar value of the Air Force inventory now exceeds $24 billion. Annually the five Air Force Air Logistics Centers (ALCs) process over three million individual receipts and six million individual shipments valued at over $55 billion. At any given time, the Air Force stores over 1.8 million items in

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locations covering over 30 million square feet. With the myriad of steps performed by the Air Force employees in these processes, the Air Force is continually vigilant and concerned with the wise stewardship of their inventory resources.

FINDING B: Air Force Efforts Could Improve Inventory Accuracy Measures. The GAO reported that the Air Force--in response to prior GAO, DoD Inspector General and Air Force audits--has adopted a new statistical sampling approach to physical inventories and has developed new measures of inventory accuracy which could result in more accurate inventory management performance reporting. The GAO observed that the new measures provide useful additional information with which to evaluate inventory management. The GAO noted, however, that it could not evaluate their effectiveness because many were not implemented at the time of the GAO audit. The GAO is concerned that the sampling methodology used to select items for inventorying leads to results that overstate the Air Force's inventory accuracy. The GAO found that 405 of the 1,500 items in the 1986 samples of the three ALCs the GAO visited had zero balances with no warehouse location. The GAO reported that physical inventories of zero-balance items with no warehouse location record are assumed correct since there is no way to accurately verify the legitimacy of the record and, therefore, including zero balance items with no warehouse location in the samples overstates the record accuracy rate. (pp. 3 4, pp. 15-20, p. 49/GAO Draft Report)

Now on pp. 3, 16-18, 31-32.

DOD RESPONSE: Partially concur. The Department concurs that the Air Force has adopted a new statistical sampling approach to physical inventories and has developed new measures of inventory accuracy. The Department also concurs that the new measures provide useful additional information with which to evaluate inventory management. The Department does not concur, however, that including zero balance items with no warehouse location in the samples overstates the record accuracy rate for the following reasons: (1) the Air Force samples and the accuracy rates are for internal Air Force management use, they do not affect performance statistics provided to the DoD; (2) the Air Force already calculates two accuracy rates, one where zero balance items are included and one with them excluded; and (3) the zero balance no location items provide the Air Force with valuable management data.

The AFLC has been using statistical sampling since 1983 to measure the effectiveness of all facets of the supply operation. It is intended for internal management use. The data collected facilitates focusing on problem areas and gauging the effectiveness of management efforts to improve accuracy. The

AFLC calculates two sets of record accuracy rates for the samples, one with the zero balance items included and one where they are excluded. The Air Force uses many measure to gauge the effectiveness of its physical inventory program, record accuracy being only one of them.

Selecting zero balance items in the statistical sample enables the AFLC to measure the effectiveness of programs used to control assets and ensure accuracy of item and locator records. The Air Force has very few permanent locations, therefore when an item goes to a zero balance the Air Force emphasis is on deleting the location as rapidly as possible, making it available for an incoming receipt of another item. The measure of zero balance records without a recorded location is, in the Air Force, an indicator of the effectiveness of the process.

The existence of assets, or locations for items with a zero balance record, can be a significant problem area. The AFLC conducts numerous programs to identify this type of discrepancy. Each year a location survey is performed on every location to ensure the accuracy of locator data. On a bi-monthly basis, locator records are matched to accountable records to ensure locations exist for items with asset balances. Statistical quality samples of warehouse areas are also performed periodically to check locator accuracy. All of these programs are designed to identify and correct item and locator inaccuracies. Limiting selection to only those items with asset balances or locations would restrict the utility of these internal Air Force management measures. See also, the DoD RESPONSE to RECOMMENDATION 2.

FINDING C: Air Force Reverses Adjustments On A Limited Basis. The GAO reported that, under current DoD policy, if research of a physical inventory adjustment can establish that the adjustment was caused by a previous erroneous transaction, the inventory adjustment is reversed. The GAO noted that such reversals are required to be reported to DoD each quarter. The GAO also noted that, in 1981, the Air Force Audit Agency criticized the AFLC for arbitrarily reversing prior physical inventory adjustments and concluded that, although the reversals greatly reduced reported adjustments and improved statistics, they tended to eliminate some problems from being reported to management. The GAO found that, in October 1985, the Air Force stopped using reversals to correct inventory records. (The GAO found that the AFLC did recognize, however, that data processing errors occurring within 30 days, such as keypunch errors, should be corrected rather than processed as an error in records and, therefore, continued to permit corrected transactions in those

limited cases.) In other cases inventory adjustments are made and reported to the DoD on the Inventory Control Effectiveness (ICE) report, and are considered a measure of the accuracy of inventory records. The GAO concluded that reversing inventory adjustments is inconsistent with ensuring complete inventory accuracy reporting. The GAO, further, concluded that reversals are necessary to maintain accuracy in documentation and records; however, they should not be used to exclude adjustments from the computation of an activity's accuracy measures. (p. 12, pp. 26-27, p. 48/GAO Draft Report)

Now on pp. 9-10, 18-19, and 31.

DOD RESPONSE: Concur. The GAO statement, however, that "in October 1985, the Air Force stopped using reversals to correct inventory records" is incorrect. The Air Force does not use reversals to correct prior erroneous inventory adjustments. The Air Force has taken internal management action to enable the conduct of Causative Research prior to the time limit for adjusting the accountable record. Conducting causative research in this manner allows the Air Force to correct the records and in many cases avoid erroneous adjustments which would have to be corrected at a later date.

FINDING D: **Air Force Research And Adjustment Policy Differs From DoD Criteria**. The GAO reported that, based on a limited analysis of five percent of the San Antonio ALC assets, the Air Force adopted a policy for researching and adjusting potential inventory variances for items, but that this policy differs from criteria spelled out in DoD Manual 4140.22-M. The GAO noted that the DoD criteria are; (1) minor variances for noncontrolled items (valued at less than $800) do not require causative research prior to being adjusted and are not included in ICE report record accuracy performance measures; (2) noncontrolled item variances valued from $800 to $16,000 (major variances) require causative research on a sample basis; and (3) major variances valued more than $16,000 and variances for controlled items require 100 percent causative research. The GAO found that the Air Force criteria for researching and adjusting potential inventory variances for items differs from the DoD criteria. The GAO also found that the Air Force criteria allow inventory records and on-hand quantities to remain out-of-balance by as much as 10 percent and $4,999. The GAO noted that the Air Force believes the change is unlikely to affect customer support. The GAO, however, concluded the change was not sufficiently supported and questions the Air Force's decision to adopt such a policy without specific authority from the DoD. (p. 4, pp. 27-30, p 48/GAO Draft Report)

Now on pp. 3, 19-20, and 31.

DOD RESPONSE: Partially concur. The Department concurs that the Air Force is utilizing inventory adjustment and research

criteria that differ slightly from the criteria contained in DoD 4000.25-2-M (formerly DoD 4140.22-M), Military Standard Transaction and Reporting Procedures (MILSTRAP). The Department does not concur that the change was not sufficiently supported, or that the change lacked authority from the DoD.

The Air Force has augmented the procedures contained in DoD 4000.25-2-M and has been testing criteria to employ more effectively the Air Force inventory control resources. The criteria are designed to concentrate Air Force resources on the most important items and the most significant problem areas. These criteria support the DoD policy contained in DoD Instruction 4140.35 which states that, "Resources shall be directed toward achieving force readiness goals such that maximum returns will be derived from the resources applied." Such initiatives are particularly opportune at a time of severe budget constraints. The Air Force has provided the OSD with a number of briefings on the criteria and the DoD has requested that the Air Force continue testing/evaluating the criteria and provide the OSD with the results of its evaluation.

Available inventory resources must be directed toward those discrepancies, controlled inventory items and high usage items for which the maximum returns will be derived from the resources applied. The Air Force research and adjustment criteria apply available inventory resources to those items from which maximum returns can be derived, e.g. unit variances greater than 10 percent of recorded quantity, or dollar variances greater than $5000.

The Air Force is in compliance with the procedures contained in DoD Instruction 4140.35, which requires inventory of: (1) all controlled items and (2) items with suspected or known problems. The Instruction also provides that items not otherwise scheduled for a complete inventory are subject either to (a) random sampling, or (b) a selective physical inventory system which includes all items as potential candidates, but which predominantly selects those items with the greatest significance for supply support, as determined by the Service/Agency.

The computer determination that a potential variance of less than 10 percent of the units on record, and less than $5,000 in value, is a selection (screening) process to determine, based on the size of the variance, which items need immediate attention. If the variance is less than or equal to 10 percent (in terms of quantity) and under $5000 (in terms of dollars), additional inventory resources are not expended at that time. The inventory is canceled for items falling into

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this category and no data changes are made to the record (including the date of last inventory). The Air Force considers these items as deferred inventory workload for which additional resources are required. The items that do not meet the above screening criteria are subjected to the complete inventory process specified by DoD 4100.25-2-M.

The screening process ensures that, for the deferred workload items, at least 90 percent of the record quantity is on hand and that the dollar value of the variance is minor (currently averaging $272.00). Consequently, there is little chance that an item falling into this category will result in a material denial or significantly effect procurement requirements. Applying inventory resources to research these items would require (based on sample data) the diversion of as much as 40 percent of the Air Force research resources from those items with variances greater than ten percent of the units and greater than $5,000. Researching these relatively small variances would not be applying resources for maximum returns. The Air Force criteria, while slightly different from that contained in DoD 4000.25-2-M, are consistent with the intent of the DoD policy. See also, the DoD RESPONSE to RECOMMENDATION 1.

FINDING E: **Inventory Accuracy Is Improving**. The GAO noted that in a 1983 report (GAO/NSIAD-84-9, "Navy's Progress in Improving Physical Inventory Controls and the Magnitude, Causes, and Impact of Inventory Record Inaccuracies in the Army, Air Force, and Defense Logistics Agency," dated 11/4/83 (GAO Code 934512) OSD Case 6273)) it found that the magnitude of inventory accuracy problems in the Army, Air Force and Defense Logistics Agency were much greater than previously recognized by the DoD. The GAO observed that, in addition to its intensive management of controlled items, the AFLC developed initiatives to improve overall inventory control. For FY 1984 through FY 1986, the GAO reported that the record accuracy rates for controlled items--classified, sensitive, and pilferable items that are provided a higher level of inventory protection--were very high, about 99 percent. The GAO also reported that its review of data from the Air Force's annual samples shows that accuracy rates for noncontrolled items have improved from FY 1983 to FY 1987 throughout the AFLC. The GAO concluded that, while considerable progress had been made, record inaccuracies continue to be a problem. (p. 4, p. 13, pp. 31-34/GAO Draft Report)

Now on pp. 2, 10-11, and 21-22.

DOD RESPONSE: Concur. The Air Force recognized that its accuracy rates were not optimal and has taken initiatives to improve them. While inventory accuracy is improving, it continues to be a high interest management item. The DoD and Air Force emphasis is on improving the accuracy of the inventory

records, which is best reflected by unit and dollar value variance rates rather than the initial inventory record accuracy rate.

FINDING F: **Reporting Requirements Adversely Impact Accuracy Measures**. The GAO reported that the DoD and Air Force inventory performance reporting requirements result in Air Force inventory accuracy measures misstating the accuracy rate. The GAO found that the DoD does not require minor variances of $800 or less to be reported and included in the ICE computation of record accuracy, whereas, if all adjustments had been included in determining the Air Force's FY 1986 record accuracy rate, it would have been reported as 40 percent, not 84.5 percent. In addition, the GAO found that accuracy rates reported to DoD are computed based on the combined results of scheduled and unscheduled inventories. The GAO noted that the AFLC believes that such gross inventory adjustment statistics do not provide a meaningful measurement of overall inventory accuracy. The GAO observed that unscheduled physical inventories address specific problem items and represent the bulk of the inventories performed at the ALCs. (Command-wide, in FY 1986, the five ALCs performed 323,711 inventories of which 75.9 percent were unscheduled.) The GAO further observed that mixing the results of unscheduled inventories with scheduled inventories in Air Force inventory reporting understates overall inventory accuracy. Finally, the GAO reported that a significant portion of Air Force stocks consist of inactive items with no issues in a 12-month period. (For example, the results of a 1984 wall-to-wall inventory at San Antonio ALC showed that 45 percent of the 14,857 items counted had no activity in the previous 12 months.) The GAO concluded that the inclusion of a large number of inactive items in reported inventory data tends to overstate accuracy rates. (The GAO noted that the Air Force Logistics Command recognized this and plans to use item activity as a key consideration in selecting items to inventory.) The GAO also noted that the DoD has proposed that the Services and the DLA implement new procedures where all variances will be considered in calculating record accuracy rates, and concluded that this would provide a more comprehensive assessment of accuracy. (pp. 4-5, pp. 34-37, p. 49/GAO Draft Report)

Now on pp. 23-24, 31.

DOD RESPONSE: Partially concur. The Department concurs that including all variances in the calculation of record accuracy rates is more comprehensive. The DoD does not concur, however, that "the DoD and Air Force inventory performance reporting requirements result in Air Force inventory accuracy measures misstating the accuracy rate." The AFLC reports inventory management data in accordance with DoD instructions on the

Quarterly Inventory Control Effectiveness (ICE) Report. The measures in the ICE report are defined in DoD 4000.25-2-M.

The current measures are not intended to be representative of the entire inventory. Rather, they accurately report the results (in terms of the measures defined by DoD) of the inventories which were actually conducted during the period. The DoD measure of major inventory record variances was never intended or portrayed to be representative of the total inventory record accuracy. In order to fulfill the DoD goal to maximize physical inventory and transaction accuracy, the DoD program requires that unscheduled inventories be given priority over scheduled inventories, except in the case of controlled items. Unscheduled inventories are conducted due to a known or suspected problem. Approximately 75 percent of the physical inventories conducted are unscheduled. The record accuracy figure that the GAO is addressing is intended to tell DoD management what proportion of the total inventories conducted resulted in significant dollar value adjustments (gains or loss adjustments over $800.00) to inventory records. That is how it is defined, that is how it is calculated, and that is what it tells management. It is therefore, inappropriate to state, "...if all adjustments had been included in determining the Air Force's FY 1986 record accuracy rate, it would have been reported as 40 percent, not 84.5 percent."

The GAO is also correct in stating that the DoD has a change in process to include all variances in the calculation of the record variance rate. This change, however, is also not intended to be representative of overall accuracy. Rather, it is intended to document how many discrepancies identified during the physical inventory process resulted in inventory adjustments.

While the current ICE performance measures are not intended to be representative of the entire inventory, the DoD is instituting an annual statistical sample which will be representative of the entire inventory. The results of the annual statistical sample will be reported in the ICE report along with the data and measures on total inventories performed.

FINDING G: Causative Research Not Contributing to Records Accuracy. The GAO reported Air Force item managers continue to adjust inventory records without performing adequate research. The GAO found, from its evaluation of validation research at San Antonio ALC, that when research beyond basic transaction validation is done causes are identified and adjustments are often unnecessary. The GAO observed that the Air Force continues to experience problems in conducting adequate

causative research into the differences between physical inventory counts and its records. The GAO found that causative research efforts end without conclusive results in substantial numbers of cases. The GAO found in addition that, although sample causative research was required for many variances under $16,000, it was not being done. (The GAO noted that AFLC officials stated they would implement a system change to automatically identify, by computer, variances requiring sample causative research.) The GAO also found that the same causes are identified as problems year after year with no evidence that corrective actions have been taken. Although AFLC regulations require trend analysis of causative research results to identify inventory management problems and evaluate the effectiveness of its causative research, the GAO found that trend analysis is not routinely conducted at ALCs. (p. 5, pp. 40-45, pp. 49-50/GAO Draft Report)

Now on pp. 3, 26-28, and 32

DOD RESPONSE: Partially concur. The DoD concurs that the Air Force continues to experience problems in conducting adequate causative research into the differences between physical inventory counts and its records. The Department also concurs that the effectiveness of causative research can always be improved. The Department does not concur, however, with the statement that "...the same causes are identified as problems year after year with no evidence that corrective actions have been taken."

While the GAO report categorizes research as inadequate, it provides no insight as to what the GAO considers adequate research. The GAO report also does not provide insight as to the level at which it should be required nor, the historical time-frames that should be reviewed. The GAO did not conduct any causative research which would enable the GAO to reach these conclusions. The GAO based its assessment of causative research, in part, on the percentage of cases which result in no conclusive findings. Assessing the adequacy of research based upon the percentage of inconclusive findings is invalid. The large numbers of of causative research cases with conclusive findings provide sufficient insight into problem areas which require management attention. Past emphasis on resolving variances led to instances where adjustments were arbitrarily and erroneously reconciled, as reported by the GAO. In recognition of this fact, the AFLC de-emphasized the assessment of research effectiveness based solely on resolution rates. In its place the AFLC instituted quality samples of research to emphasize that accuracy of research was more important than resolution. Quality samples taken during Fiscal Year 1987 indicate a 92 percent accuracy on research. Since the implementation of the revised research/adjustment criteria,

which focused causative research efforts on the most significant variances, cause identification improved from 47.2 percent in 1986 to 61.8 percent in 1987. The AFLC requires that causative research be conducted on a sample basis on all variances under $16,000. In light of the GAO concern, the AFLC has taken action and has changed AFLCR 67-9 to require identification of results of sample causative research as a requirement to be reported by the ALCs on a regular basis.

The GAO reported that, "the same causes are identified as problems year after year with no evidence that corrective actions have been taken." The fact that the same causes reoccur does not indicate lack of effective management action. While the same causes may be the most prevalent from one year to the next, what is significant is whether or not their incidence rate is declining. The AFLC has taken numerous management actions in the past few years to address the identified causes of inventory variances. Corrective actions include: (1) eliminated automatic adjustments which had been identified as causing inventory variances; (2) significantly reduced the reversals of prior adjustments to promote accuracy in the adjustment process; (3) required a quality check on the research process to include the accurate assignment of cause codes; (4) required the reporting of analysis on predominant cause codes; (5) instituted a signature receipt process for issues to maintenance to confirm delivery of property; (6) tightened numerous acceptable quality levels on warehousing operations; (7) restricted post-post processing to system downtimes and emergency requirements; (8) implemented numerous system enhancements to improve accountability of the supply process; (9) developed an automated inventory denial research system to improve the quality of research; (10) facilitated training of new personnel; and (11) developed an expert system to aid in the conduct of research. All of these actions, and others too numerous to mention, were prompted by analysis of predominant cause codes and identified inventory control problem areas. Clearly causative research is a value added process. See also, the DoD RESPONSE to RECOMMENDATION 3.

FINDING H: Physical Security Over Inventories Needs To Be Stressed At Air Logistics Centers. The GAO observed that physical security of inventory assets is an integral element of inventory management. The GAO noted that, in January 1982, the AFLC initiated a change to the security regulation that defined an industrial area as an area where material is housed, used, received, and processed or stored, that directly supports the Logistics Command mission. (It stipulated that such areas require security fencing and that access to the areas should be controlled through the use of personnel badges.) The GAO

observed that security at the centers visited appeared inadequate. (Only one of the three centers GAO visited had security fencing in place.) The GAO found that, while all three centers used personnel badges to control access to their primary storage sites, privately-owned vehicles and contractor vehicles were allowed to park adjacent to warehouse facilities. The GAO found that, in June 1987, a Federal Grand Jury indicted four warehouse workers at the San Antonio ALC on theft. The GAO noted that Air Force investigators alleged that the defendants carried contraband to their privately owned vehicles. The GAO concluded that allowing such vehicles to park near industrial areas increases the vulnerability of Government property to employee theft. The GAO further concluded that primary storage facilities, if not all storage facilities, should be protected by security fencing. Finally, the GAO concluded that continued emphasis on security is warranted. (p. 5, pp. 45-47, p. 50/GAO Draft Report)

Now on pp. 4, 28-30, and 32

DOD RESPONSE: Concur. The Department concurs that physical security of DoD resources is important to ensuring supply support and that it should be continually emphasized. The GAO report, however, gives no consideration to the significant efforts being made in this area.

The Air Force has consolidated various initiatives that directly impact improving the security under the program logo of "HARVEST SECURE." The program's general categories include threat awareness, physical security, computer system security, inventory management, intransit control and contractor accountability. Specific measures taken include badge identity systems, increased security awareness training, summer gates on warehouse entrances, increased lighting inside security cages, limitations on personnel entrances/exits, and restrictions on privately owned vehicle parking adjacent to warehouses. Over five million dollars have been spent by the AFLC to install alarms, intrusion detection systems, television cameras/monitors, and over 40 miles of new fencing. The Air Force is completely automating over 2 million square feet of covered storage areas and investing in new applications in the areas of robotics, voice activated automation, artificial intelligence, and microcircuit technology. The continuous improvement of physical security at the Air Force storage complexes is an important part of its storage program objectives. See also, the DoD RESPONSE to RECOMMENDATION 4.

FINDING I: **Air Force Inventory Management Controls A Material Weakness**. The GAO reported that the Air Force, considered inventory management controls to be a material weakness in its FY 1986 assessment of internal controls conducted pursuant to

the Federal Managers Financial Integrity Act of 1982. The GAO found that the AFLC reported weaknesses in control processes that could result in inaccurate records and possible theft or diversion of property. The GAO noted that, to correct them, the AFLC identified eight actions--including implementing an automated warehouse system and a new stock control and distribution system contained in the Air Force Inventory Improvement Plan. The GAO found that some of them are long range with one not scheduled for completion until January 1989, and that, as of September 30, 1986, the AFLC had reported 3 of the 8 actions completed. The GAO concluded that, since the impact of the improvements has not yet been measured and other improvements are still to be implemented, according to the 1987 report, this area should continue to be considered as a material weakness and corrective actions should be reported in the FY 1988 Financial Integrity Act report by the Secretary of the Air Force. (p. 3, pp. 20- 21/GAO Draft Report)

Now on pp. 2, 14-15, and 32.

DOD RESPONSE: Concur. The Department concurs the Air Force considered inventory management controls to be a material weakness in its FY 1986 assessment of internal controls conducted pursuant to the Federal Managers Financial Integrity Act of 1982. The Air Force corrective action was developed and initiated, with an estimated completion date of January 1989. The Air Force will continue with its corrective action plan and annually report progress against the plan until the Air Force determines that the weakness has been corrected. See also, the DoD RESPONSE to RECOMMENDATION 5.

RECOMMENDATIONS

RECOMMENDATION 1: The GAO recommended that the Secretary of the Air Force direct the Commander, AFLC to reevaluate the basis for its research and adjustment policies, especially the policy of not adjusting discrepancies under $5,000 which do not involve more than 10 percent of recorded items, to ensure that they do not have adverse effects on inventory management. If the policy is determined to be supportable, ensure that authority has been obtained from DoD to implement a change in accordance with established DoD policy. (p. 51/GAO Draft Report)

Now on pp. 4, 33.

DoD Response: Concur. The AFLC Research/Adjustment criteria are consistent with the intent of the DoD policy. The Air Force criteria support the DoD policy contained in DoD Instruction 4140.35 which states that, "Resources shall be directed toward achieving force readiness goals such that maximum returns will

be derived from the resources applied." The Air Force criteria are designed to concentrate Air Force resources on the most important items and the most significant problem areas. Such initiatives are particularly opportune at a time of severe budget constraints. The Air Force has provided the OSD with a number of briefings on the criteria and the DoD has requested that the Air Force continue testing/evaluating the criteria and provide the OSD with the results of its evaluation. See also, the DoD RESPONSE to FINDING D.

Now on pp. 4, 32.

RECOMMENDATION 2: The GAO recommended that the Secretary of the Air Force direct the Commander, AFLC to revise the procedures for conducting statistical samples to measure inventory accuracy to exclude zero-balance, no-location items. (p. 52/GAO Draft Report)

DoD Response: Partially concur. The Department concurs that statistical sample inventories provide valuable information that enables management to measure the overall inventory accuracy. The DoD is establishing annual statistical sample inventories as a DoD-wide requirement. The sample inventories conducted by the Air Force are, however, for internal Air Force use and do not affect the performance data currently provided to the DoD. The Air Force has been conducting statistical sample inventories since 1983. The sample and performance measures developed by the Air Force are providing the Air Force with valuable inventory accuracy insights. The Air Force already computes record accuracy rates resulting from its statistical samples which both include and exclude zero balance items. The recommended direction from the Secretary of the Air Force to the Commander AFLC is therefore unnecessary. The Department could concur in a recommendation worded as follows, "Recommend that the Secretary of Defense require an annual statistical sample and require that the results be reported in the ICE report. For purposes of consistency throughout the Department, the DoD sample should include only those zero balance items where there is a record of an existing or last known location." See also, the DoD RESPONSE to FINDING B.

Now on pp. 4, 33.

RECOMMENDATION 3: The GAO recommended that the Secretary of the Air Force direct the Commander, AFLC to reemphasize the need for effective causative research and determine the reasons why underlying causes of inventory discrepancies are not being identified and systemic problems resolved. Variances currently under the monetary criteria for causative research should be sampled as further input to identifying and correcting systemic problems. (p. 52/GAO Draft Report)

DoD Response: Partially concur. The DoD concurs that effective causative research requires continuous emphasis. The AFLC, however, presently has a program to measure the effectiveness of causative research and has taken extensive management action to identify and correct problem areas. Sampling under the monetary criteria is required and a reporting requirement has been established. The Department could concur in a recommendation worded as follows: "Recommend that the Secretary of the Air Force and the Commander, AFLC, continue emphasizing the need for effective causative research that determines the underlying causes of inventory discrepancies and systemic problems." See also, the DoD RESPONSE to FINDING G.

RECOMMENDATION 4: The GAO recommended that the Secretary of the Air Force direct the Commander, AFLC to strengthen physical security at ALCs by providing fencing where practical around warehouses, especially primary storage facilities, and not allowing parking of contractor or privately owned vehicles adjacent to warehouses. (p. 52/GAO Draft Report)

Now on pp. 4, 33

DoD Response: Concur. Physical security has received constant attention at all levels in the AFLC since 1981. All facilities are reviewed periodically to determine the need for strengthening physical security. A Security Awareness/ Vulnerability Evaluation Team composed of functional and security experts from AFLC headquarters periodically evaluates security at all bases on a no-notice basis. Attempted penetrations are included in the evaluation. The AFLC has cages and fencing around essential areas and over 40 miles of new fencing has been installed around warehouses and primary storage facilities. A balance between support to the customer and the installed/planned barriers has been reached. Security requirements are continually reviewed to maintain that balance. A policy is in place to limit parking of privately owned vehicles adjacent to warehouses. See also, the DoD RESPONSE to FINDING H.

RECOMMENDATION 5: The GAO recommended that the Secretary of the Air Force again identify inventory management controls as a material weakness in its FY 1988 annual assessment of internal controls. (p. 52/GAO Draft Report)

Now on pp. 4, 33

DoD Response: Concur. The DoD concurs with the intent of this recommendation. Weaknesses that are included in the DoD Annual Statement of Assurance are reported to the OASD (Comptroller) by the responsible Components, of which the Department of the Air Force is one. This requirement is explained in detail in the DoD Directive 5010.38, "Internal Management Control Program," paragraphs E.1 and E.3. The Secretary of the Air Force did

report inventory control as a material weakness to the OSD in his Fiscal Year 1986 statement. Once a weakness is reported in the Annual Statement it must continue to be reported until all corrective milestones have been completed. The Department recommends that this recommendation be reworded as follows; "The Secretary of the Air Force should continue executing and reporting progress on the milestones for correction of the material weakness identified in his Fiscal Year 1986 Financial Integrity Act statement until such time that the Air Force determines the weakness has been corrected." See also, the DoD RESPONSE to FINDING I.

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